

5 **CLAIMS**

What is claimed is:

1. An optical spectrum monitoring system, comprising:
 - 10 a tunable filter that filters an optical signal;
 - a signal detector that detects a filtered optical signal from the tunable filter;
 - a logarithmic amplifier that amplifies the output of the signal detector;
 - 15 an analog to digital converter for converting the output of the logarithmic amplifier spectrum into sample data; and
 - a data processing subsystem that analyzes the sample data.
2. An optical spectrum monitoring system as claimed in claim 1, further comprising:
 - 15 a package;
 - an optical bench installed within the package, the tunable filter and the detector being connected to optical bench;
 - temperature detector for detecting a temperature within the package; and
 - a thermoelectric cooler for controlling a temperature of the package.
3. An optical spectrum monitoring system as claimed in claim 2, wherein the log amplifier is installed within the package.
4. An optical spectrum monitoring system as claimed in claim 2, wherein the logarithmic amplifier is installed on the optical bench